

Rivers and Streams

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Understanding Watershed/Habitat Relationships: The Key to Lasting Improvements in River Fisheries

Interior rivers and streams have been, and continue to be, one of the most popular destinations of Iowa anglers. The numbers, sizes, and species of fish available to these anglers are determined in large part by the quality and quantity of habitat in the streams they fish. In turn, the quality of a stream's habitat is a reflection of not only the underlying features of its watershed such as soils and geology, but also the past and present activities in the watershed and the stream channel itself. Historically, watershed and stream channel alterations in Iowa proceeded without a clear understanding of the negative effects of lost or degraded habitat on river fish communities.

Gaining a better understanding of the relationship between watershed conditions, instream habitat, and river fish communities is the goal of an ongoing river research project. The study is evaluating the condition of river and stream habitats throughout Iowa, and the fish communities associated with these habitats. Since 1995, the habitat available in 98 stream reaches across the state has been intensively inventoried. Detailed measurements were made in each reach to provide a clear picture of the stream's bottom materials, water depths, flow patterns, stream bank and streamside vegetation condition, and relative amounts of rock, wood, and other cover for fish. Fish communities were sampled in 92 of these reaches to determine numbers, sizes, and species of fish associated with the habitats found at each site.

Information gained from this study will be used to explore relationships between habitat found in Iowa streams and conditions in their watersheds. A companion project being conducted through the Iowa Cooperative Fish and Wildlife Research Unit at Iowa State University is developing a comprehensive rivers and streams database for Iowa, the Iowa Rivers Information System (IRIS). This database will make it easier to relate habitat and fishery information to existing geological, land use, watershed, channel morphology, and water quality data, and will help identify factors which have the greatest impact on condition of stream habitat and fish communities. The study will also provide baseline data that can be used to determine the health of a stream's habitat and fish community in relation to other streams in the same region. This will allow us to monitor changes in river and stream habitat and fish communities in relation to changes in their watersheds.

A better understanding of what is affecting stream habitat at a given location will provide fishery managers better direction for protecting and enhancing stream habitat, and will ultimately lead to improved river and stream fisheries resources in Iowa.